# 1 Standard Hyperbolic Functions

## 1.1 Standard Functions

$$\int \sinh(ax)dx = \frac{\cosh(ax)}{a} + C$$
$$\int \cosh(ax)dx = \frac{\sinh(ax)}{a} + C$$
$$\int \tanh(ax)dx = \frac{\ln|\cosh(ax)|}{a} + C$$
$$\int \operatorname{csch}(ax)dx = \frac{\ln|\tanh(\frac{ax}{2})|}{a} + C$$
$$\int \operatorname{sech}(ax)dx = \frac{\arctan(\sinh(ax))}{a} + C$$
$$\int \coth(ax)dx = \frac{\ln|\sinh(ax)|}{a} + C$$

## 1.2 Inverse functions

$$\int \arcsin(ax)dx = x\arcsin(ax) + \frac{\sqrt{1-a^2x^2}}{a} + C$$